



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105**

April 17, 2017

Christine Gabriel  
Bureau of Land Management  
Mount Lewis Field Office  
50 Bastian Road  
Battle Mountain, Nevada 89820

Subject: Gold Bar Mine Draft Environmental Impact Statement (EIS), Eureka County, Nevada [EIS No. 20170028]

Dear Ms. Gabriel:

The U.S. Environmental Protection Agency (EPA) has reviewed the above referenced document. Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's (CEQ) NEPA Implementation Regulations at 40 CFR 1500-1508, and our NEPA review authority under Section 309 of the Clean Air Act.

EPA appreciates the Bureau of Land Management's responsiveness to the input that we provided last year to the development of the subject Draft EIS. Our comments today are provided for your consideration as the environmental review process for the proposed project proceeds.

According to the Draft EIS, McEwen Mining Incorporated (MMI) plans to disturb approximately 1,129 acres, including approximately 946 acres of public land administered by the BLM, in order to construct an open pit gold mine; heap leach pad; waste rock disposal areas; an adsorption, desorption, and recovery plant; water pipeline; access roads; and ancillary facilities. The proposed life of the mine is seven years (five years of mining and heap leaching, and two years of residual leaching). As my staff shared with you earlier this year, it has come to our attention that MMI has announced the purchase of nearby mining claims, and its associated intentions to increase production at the proposed facilities described in the Proposed Action. This appears to be a connected action; however, it is not discussed in the DEIS.

EPA has rated the Gold Bar Mine Draft EIS as "EC-2 – Environmental Concerns - Insufficient Information" (see enclosed "Summary of Rating Definitions and Follow-Up Action"). Our concerns are based primarily on the proposed project's potential impacts to water resources, including Roberts Creek and its associated riparian system. EPA recommends that the Final EIS provide a monitoring and mitigation plan with clearly defined metrics and triggers; information about reasonably foreseeable connected actions; and further details about the proposed long-term funding mechanism. These and other recommendations are discussed further in the enclosed Detailed Comments.

We appreciate the opportunity to review this Draft EIS. Please send one hard copy and one CD of the Final EIS to this office (mailcode ENF-4-2) when it is officially filed with EPA's e-NEPA. If you have questions, please call me at (415) 972-3521, or contact the lead reviewer Patrick Kelly at (415) 972-3198 or kelly.patrickj@epa.gov.

Sincerely,



Kathleen Martyn Goforth, Manager  
Environmental Review Section

Enclosures: (1) Summary of EPA Rating Definitions  
(2) EPA's Detailed Comments on the Gold Bar Mine DEIS

cc by email: Joe Moskiewicz, Bureau of Land Management, Nevada  
Matt Donaldson, Nevada Department of Environmental Protection, Nevada  
Genevieve Skora, U.S. Fish and Wildlife Service

## **SUMMARY OF EPA RATING DEFINITIONS**

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

### **ENVIRONMENTAL IMPACT OF THE ACTION**

#### ***"LO" (Lack of Objections)***

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

#### ***"EC" (Environmental Concerns)***

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

#### ***"EO" (Environmental Objections)***

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

#### ***"EU" (Environmentally Unsatisfactory)***

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

### **ADEQUACY OF THE IMPACT STATEMENT**

#### ***Category 1" (Adequate)***

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

#### ***"Category 2" (Insufficient Information)***

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

#### ***"Category 3" (Inadequate)***

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

### Water Resources

EPA is concerned that the impacts to Roberts Creek, its associated riparian vegetation, and the underlying alluvial aquifer are not sufficiently described in the DEIS. As described in the document, Roberts Creek is a typical Basin and Range “losing stream,” with perennial headwaters and intermittent flow patterns as the drainage exits the mountain front and terminates in the adjacent playa. Although such streams do not typically connect to downstream waters, they act as a primary conduit for alluvial aquifer recharge and, during wet years, can provide substantial recharge at the basin scale. Although the riparian areas that perennial and intermittent streams support occupy a small percentage of the overall landscape, they host a disproportionately greater percentage of the biodiversity than the areas surrounding them.<sup>1</sup>

The 10-foot drawdown contour from the cone of depression that would be created by the production wells at Roberts Creek Ranch (Figure 4.20-1) clearly encompasses a riparian meadow adjacent to Roberts Creek. The DEIS states that Roberts Creek is not connected to groundwater and would not be affected by pumping of alluvial groundwater (pg. 4-151). This conclusion is based on depths to groundwater in adjacent wells that exceed the range of seasonal variability; however, the wells selected to represent the static potentiometric surface in the area are located outside of the Roberts Creek drainage in slopes above the valley bottom.

By definition, surface flow in losing streams is not supported by groundwater for portions, or all, of the year, yet the hyporheic zone remains functionally connected to the shallow groundwater system. The presence of the riparian corridor appears to be evidence of this connection. Furthermore, downstream pumping adjacent to intermittent streams can affect the upstream reach length supported by local groundwater baseflow<sup>2</sup>, effectively pushing the transition point from perennial to intermittent flow regimes upstream. The conclusion that Roberts Creek would not be affected by pumping, therefore, is not sufficiently supported in the DEIS. Furthermore, there is no monitoring and mitigation plan in the DEIS to enable timely detection and avoidance of potentially irreversible impacts from production well pumping on riparian areas within the Roberts Creek drainage.

#### **Recommendation:** In the Final EIS:

- Refine Figure 4.20-1 to identify reaches of Roberts Creek that are perennial, intermittent, and ephemeral.
- Analyze the potential impacts to Roberts Creek and the associated riparian area that could occur if the reach within the 10-foot drawdown contour is affected by pumping. Consider, in this analysis, the fact that drawdown of far lesser magnitude (e.g., less than 1 foot) can, in arid areas, have a significant impact on vegetation and seasonal surface water availability, even if the limitations of modeling preclude delineating such contours.

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<sup>1</sup> Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, R. Leidy, M. Scianni, P. Guertin, M. Tluczek, and W. Kepner. 2008. *The ecological and hydrological significance of ephemeral and intermittent streams in the arid and semi-arid American Southwest*. U.S. Environmental Protection Agency, Office of Research and Development and U.S. Department of Agriculture/Agricultural Research Service. Southwest Watershed Research Center, Washington, DC.

<sup>2</sup> Fox, G.A., and D.S. Durnford. 2003. *Unsaturated hyporheic zone flow in stream/aquifer conjunctive systems*. *Advances in Water Resources* 26: 989-1000.

If the transition between intermittent and perennial reaches is near the production wells, identify measures that would mitigate the impacts on riparian areas upgradient of the wells.

- Consider incorporating an appropriate monitoring and mitigation program, including:
  - Appropriately located monitoring well and stream discharge monitoring locations
  - A field monitoring program with adequate sampling frequency
  - Establishment of criteria that would trigger mitigation actions
  - Specific measures that would be implemented if trigger criteria are reached

#### Connected Actions

On February 24, 2016, MMI announced that it had purchased the Afgan-Kobeh property, consisting of 109 mining claims located approximately 3 miles southeast of the Gold Bar Project. MMI publically stated that, “The objective is to develop the property into a satellite resource that can contribute to production from Gold Bar.”<sup>3</sup> MMI budgeted \$1.5 million USD in 2016 for a 16,000-foot exploration project on the property; however, exploration at the Afgan-Kobeh property and MMI’s intent to use the property as an additional source of ore for Gold Bar is not mentioned in the DEIS. It appears that the development of the Afgan-Kobeh property is a reasonably foreseeable connected action which, along with its projected contribution to production at Gold Bar, should be considered within the scope this EIS, per 40 CFR § 1508.25.

#### **Recommendation:** In the Final EIS:

- Fully disclose the functional dependencies between MMI’s Gold Bar and Afgan-Kobeh properties, and provide timelines where applicable. Clarify whether facilities described in the EIS, such as the heap leach pad, waste rock facilities, and ADR plant, have been designed to accommodate the increased, and/or longer duration production associated with the Afgan-Kobeh property.
- Describe the potential impacts associated with the development of, and production from, the Afgan-Kobeh property in conjunction with the Proposed Action. See the Council on Environmental Quality’s guidance regarding analysis of cumulative impacts.<sup>4</sup>
- Analyze whether or not those impacts, along with those of the Proposed Action, are cumulatively significant, and whether or not elements of the Proposed Action could be redesigned to minimize any identified cumulative effects. In particular, address whether assumptions regarding vehicle traffic and the use of generator power remain viable in light of the additional production. Additionally, disclose whether MMI is willing to include disturbance acreage on the privately held parcel in its Greater Sage Grouse Habitat mitigation plan.

#### Pit Backfill

The DEIS does not fully describe the environmental triggers for potential Cabin Creek pit backfill actions under the Proposed Action. Page 2-17 states: “Cabin Phase 2 may require backfill material to be hauled in from Cabin Phase 1, if it is determined during operations that there would be surface water run-on issues for that pit (Figure 2.2-9).” The DEIS states that both the Gold Ridge and Gold Pick pits

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<sup>3</sup> A news release titled “McEwen Mining Acquires Property in Nevada” released on February 24, 2016 by McEwen Mining Inc. [http://s1.q4cdn.com/807296388/files/doc\\_news/20160223\\_afgan/20160224\\_afgan.pdf](http://s1.q4cdn.com/807296388/files/doc_news/20160223_afgan/20160224_afgan.pdf)

<sup>4</sup> White House Council on Environmental Quality, *Considering Cumulative Effects Under the National Environmental Policy Act*, January 1997. <http://ceq.eh.doe.gov/nepa/ccenepa/ccenepa.htm>

may also require some degree of backfill, but is vague in its discussion of this matter, making it difficult to evaluate the environmental impacts of such backfilling activities.

**Recommendation:** In the Final EIS, clarify the circumstances that would trigger the need for pit backfill, and describe the impacts that would result from “surface water run-on issues” in the Cabin Creek pit, how backfill would mitigate those impacts, and whether changes to pit design or timing could prevent those impacts. Similarly, describe and analyze the potential backfill scenarios for Gold Ridge and Gold Pick.

#### Long-Term Funding Mechanism for Post-Closure Monitoring and Mitigation

The DEIS indicates that BLM would require MMI to establish a long-term funding mechanism (LTFM) to assure completion of long-term post-closure monitoring and mitigation obligations after reclamation and financial guarantee release; however, it does not disclose what post-closure monitoring or mitigation actions MMI is committing to or the potential cost of the LTFM. No analysis of the adequacy and uncertainties associated with the LTFM is provided, nor does the DEIS describe or analyze the actual funding mechanism or funding options in any detail to demonstrate how MMI would ensure that the costs of post-closure monitoring and mitigation would be covered for as long as needed.

**Recommendation:** In the FEIS, identify the post-closure monitoring or mitigation actions, the proposed long-term funding mechanism, and estimate the appropriate level of funding needed. Additionally, analyze the anticipated effectiveness of the LTFM with that level of funding in ensuring protection of impacted resources. EPA suggests incorporating the costs associated with a monitoring and mitigation plan for riparian areas connected to Roberts Creek, and with the Sage Grouse mitigation plan, into the LTFM.

#### Contingencies for Closure Earlier than Planned

MMI’s feasibility study<sup>5</sup> for Gold Bar indicates that the break-even point for the mine is three years, assuming a reasonable average gold price of \$1,150/ounce. In light of the observed volatility of the gold market, EPA believes that it is important that the FEIS consider contingencies to ensure that the site would be properly managed for as long as necessary to protect human health and the environment, and demonstrate that all required monitoring and mitigation measures would be adequately funded in the event that the mine closes prior to the anticipated completion of active mining operations at year five.

**Recommendation:** For purposes of estimating the net present value and/or current value of the LTFM, consider contingencies such as closure of the mine prior to the planned closure period.

#### Pollution Reduction

EPA supports implementation of the mitigation measures identified in the DEIS. Additional measures are available that could further reduce the air and water pollution that would be generated during mine construction and operations, while allowing the project’s power generation, transportation, and processing needs to be met.

**Recommendation:** Consider incorporating into the proposed project some or all of the following measures, to the extent feasible:

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<sup>5</sup> Feasibility Study for the Gold Bar Mine, NV [http://s1.q4cdn.com/807296388/files/technical\\_report/NI\\_43-101\\_Tech\\_Rep\\_GoldBar\\_Feasibility.pdf](http://s1.q4cdn.com/807296388/files/technical_report/NI_43-101_Tech_Rep_GoldBar_Feasibility.pdf)

- Use of conveyors rather than haul trucks where possible, e.g., for transporting ore to processing areas and the heap leach facility. This may also be relevant to the potential connected action at the Afgan-Kobeh property;
- Alternative energy, such as on-site distributed generation systems, solar thermal water heating, etc., in lieu of on-site natural gas generators;
- Use of alternative transportation fuels, electric vehicles, etc., during construction and operation, if applicable;
- Commitment to using high efficiency diesel particulate filters on new and existing diesel engines to provide nearly 99.9% reductions of black carbon emissions.

#### Applicant Committed Environmental Protection Measures

EPA acknowledges the commitment by McEwen Mining Inc. (MMI) to perform the environmental impact mitigation measures described in Section 2.2.20; however, MMI's commitment to compensatory mitigation measures for Greater Sage Grouse habitat is unclear. Section 2.2.20 (pg. 2-68) describes a commitment to a reclamation/revegetation plan for high elevation waste rock dumps: "The revegetation plan is specifically focused on the development of sage grouse habitat in areas that were either previously disturbed and unreclaimed or woodland dominated." It is unclear whether the revegetation plan mentioned above is the same one described in Appendix F of the DEIS, which is intended to offset impacts from the project and achieve a net conservation gain for the Greater Sage Grouse, and whether MMI is committing to the reclamation ratios for disturbed acreage outlined therein.

**Recommendation:** Clarify, in Section 2.2.20 of the FEIS, MMI's commitment to compensatory mitigation measures for Greater Sage Grouse Habitat; specifically, whether the reclamation ratios for the revegetation plan are tied only to "high elevation waste rock dumps," or to the project as a whole.

